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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/523,828 | 02/08/2005 | Grant Berent Jacobsen | 01435.0207-00000 | 3990 |
| 22852 7590 03/12/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413 | | | EXAMINER KOSLOW, CAROL M | |
| | | | ART UNIT 1755 | PAPER NUMBER |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/12/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/523,828

Applicant(s)

JACOBSEN ET AL.

Examiner

C. Melissa Koslow

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1755

This action is in response to applicants' amendment of 16 August 2006. The amendments to the specification and the claims have overcome the objections to claim 10, the disclosure and the specification. Applicant's arguments with respect to the art rejections have been fully considered but they are not persuasive.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,783,512.

This reference teaches a supported catalyst produced by mixing, in a solvent, (a) an ionic activator comprising a cation and an anion containing a moiety having an active hydrogen and (c) an organometal compound; adding the support (d), which is pretreated silica, and then adding (b) a transition metal compound (b) (col. 18, lines 16-25; col. 17, line 65-col. 17, line 15 and col. 17, lines 1-11). Examples 5 and 6 and column 14, line 64 through column 25 teach the pretreated silica can be one that is pretreated with a trialkylaluminum compound, which suggests the use of any trialkylaluminum, such as the claimed triisobutylaluminum. The preferred transition metal compound is a metallocene having a formula which includes the compounds of claim 10 (col. 12, line 57 through column 13, line 20 and examples 1-6). The preferred ionic activator is trialkyl ammonium tris-(pentafluorophenyl)(4-hydroxyphenyl) borate, (col. 8, lines 60-64 and examples). The organometal compound can be an alumoxane, such as that having the formula $R_2Al-O(-Al(R)-O)_m-AlR_2$, where R can be a C1-10 alkyl and m is 1-50 (col. 13, line 62-col. 14, line 4). This includes the claimed tetraisobutyldialuminoxane. Column 19, lines 3-5 teach the molar ratio of (a) to (c) is 0.05-1000:1, which includes the claimed 20:0.1, or 200:1.

Art Unit: 1755

Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Thus the reference suggests the claimed method of preparing a supported transition metal catalyst.

Column 19, line 13 through column 20, line 67 teaches using the catalyst produced by the above method to polymerize, under polymerization conditions, ethylene, propylene and combinations of ethylene and/or propylene with at least one other α -olefin having 2-8 carbons, such as 1-butene, 1-hexane, 1-octane and 4-methyl-1-pentane. The process can be preformed in the gas, slurry or solution phase. The reference suggests the claimed polymerization process.

Claims 1-15 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,271,165.

This reference teaches a supported catalyst produced by mixing, in a solvent, (a) an ionic activator comprising a cation and an anion containing a moiety having an active hydrogen and (c) an organometal compound; adding the support (d), which is pretreated silica, and then adding (b) a transition metal compound (b) (col. 25, lines 37-40; col. 26, lines 58-col. 27, line 3; col. 29, lines 9-17 and examples). Examples 5, 6, 10-21 and column 24, lines 13-42 teaches the pretreated silica can be one that is pretreated with a trialkylaluminum compound, which suggests the use of any trialkylaluminum, such as the claimed triisobutylaluminum. The preferred transition metal compound is a metallocene having a formula which includes the compounds of claim 10 (col. 17, line 26-col. 21, line 22 and examples). The preferred ionic activator is trialkyl ammonium tris-(pentafluorophenyl)(4-hydroxyphenyl) borate, (col. 13, lines 10-14 and

Art Unit: 1755

examples). The organometal compound can be an alumoxane, such as that having the formula $R_2Al-O(-Al(R)-O)_m-AlR_2$, where R can be a C1-10 alkyl and m is 1-50 (col. 22, line 65-col. 23, line 10). This includes the claimed tetraisobutyldialuminoxane. Column 29, lines 62-65 teaches the molar ratio of (a) to (c) is 0.05-1000:1, which includes the claimed 20:0.1 or 200:1. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Thus the reference suggests the claimed method of preparing a supported transition metal catalyst.

Column 30, line 6 through column 31, line 46 and the examples teaches using the catalyst produced by the above method to polymerize, under polymerization conditions, ethylene, propylene and combinations of ethylene and/or propylene with at least one other α -olefin having 2-8 carbons, such as 1-butene, 1-hexane, 1-octane and 4-methyl-1-pentane. The process can be preformed in the gas, slurry or solution phase. Example 12 teaches the gas phase polymerization occurs in a fluidized bed gas phase reactor. The reference suggests the claimed polymerization process.

The declaration is defective since the nationality and address in section are not given and thus, technically, cannot be used to overcome the art rejections. Even if the declaration was not defective, it is insufficient to overcome the rejection of the claim as set forth in the last Office action because: it does not show that the use of aluminoxane gives unexpected results, nor that the order of producing the catalyst is critical. The catalyst preparation methods in the declaration are different from that in specification. For example, the method of making the support in the

Art Unit: 1755

declaration is different from that in the specification, the amounts of the borate, aluminum compounds and metallocene in the declaration is different from that in the specification and the solvents are different since the specification teaches the use of cyclohexane and the declaration uses hexane. Given these differences, it cannot be determined what caused the differences shown in the figures. In addition, there is no clear indication that the difference in activity and melt strength between the use of an aluminosilicate and an alkylaluminum is in fact unexpected.

The arguments, which are based on the showing in the declaration, are not convincing since there is no showing of unexpected results when using aluminosilicate nor that the claimed order is critical. The references suggest the claimed process and the use of aluminosilicate in the claimed process. The fact the support is optional, the order of mixing is not considered critical and that there are no examples using aluminosilicate does not detract from the rejection, since the references do teach embodiments which read on the claimed process. The rejections are maintained.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1755


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
March 9, 2007


C. Melissa Koslow
Primary Examiner
Tech. Center 1700